

are between **all** the walls and the bottom.” (Emphasis added.) This rejection is respectfully traversed for the reasons set forth below.

First, the office action is mistaken in concluding that the force transmitting surfaces are disclosed as being on only two of the walls. Figure 12 clearly illustrates an embodiment in which three of the walls include force transmitting surfaces. Accordingly, the statement that the specification only describes the force-transmitting surfaces on two of the walls must be incorrect.

In addition, the claims do not require that "all" the walls and the bottom have force transmitting surfaces therebetween. Instead, the claims require that there be force transmitting surfaces between the walls (plural) and the bottom. How many of these walls have force transmitting surfaces (with cooperating surfaces on the bottom) is not specifically claimed. The office action has added the word "all" to the into the claims and then rejected them when this phantom claim element was not found in the specification. Clearly a rejection on this basis is unfounded. Since there is no claimed requirement for all the walls to have force transmitting surfaces that cooperate with the bottom, there is no need for the specification to disclose such an arrangement. (Of course, this is not to say that claim 1 does not cover such an arrangement, as this possibility is the reason for open ended claims.)

The specification supports a claim such as claim 1 which includes "force transmitting surfaces on the walls and bottom..." The figures specifically show walls (plural) with force transmitting surfaces and cooperating force transmitting surfaces on the bottom. The figures illustrate shipping containers with four and six walls. The application specifically states "it should be clear now that the

invention can be practiced with any number of sides.". Page 11, second full paragraph. In light of this disclosure, it appears that the claims are fully supported by the specification, and the rejection under Section 112 should be withdrawn.

The claims to have also been rejected because the word "seamless" appeared to the examiner to be inaccurate. This position is unsupported by the specification or the plain meaning of the term. Merriamwebster.com gives the following definition of "seam":

Main Entry: 1seam

Function: noun

Etymology: Middle English seem, from Old English sEam;  
akin to Old English slwian to sew -- more at SEW

1 a : the joining of two pieces (as of cloth or leather) by  
sewing usually near the edge b : the stitching used in such a  
joining

2 : the space between adjacent planks or strakes of a ship

3 a : a line, groove, or ridge formed by the abutment of edges

b : a thin layer or stratum (as of rock) between distinctive  
layers; also : a bed of valuable mineral and especially coal  
irrespective of thickness c : a line left by a cut or wound; also

: WRINKLE

4 : a weak or vulnerable area or gap <found a seam in the  
zone defense>

The first definition is obviously inappropriate in the current context since there is no reference in the specification or claims to fabric or stitching of fabric together. However, the second, third, and fourth definitions clearly apply to the use of the word "seamless" in the specification and claims.

The Summary of the Invention states, "The hinges are permanently fused to the first material without seams or crevices that could collect contaminants."

On page 9, second paragraph, the specification states,

When the hinges are molded, the hot, liquid Santoprene partially melts the bottom and side surfaces of the recess 86, forming an outboard leaf 82 of the hinge 32 that has a continuous, integral seal with the propylene of the end wall 30. This bond is free of voids, crevices, or cracks where contaminants could accumulate."

The second definition of "seam" refers to a space between adjacent planks of a boat. This second definition is metaphorically apt as the space between planks of a boat hull must be caulked to make the boat watertight. A seamless hull is one that would have no cracks where caulking could be placed.

The third definition and applies literally: a groove formed by the abutment of edges. A connection between two materials that is free of seams ("seamless") is clearly one that has no groove formed by the abutment of edges. This meaning is not only the appropriate dictionary meaning, but it is also the meaning that would be readily selected in view of the purpose of the invention and the quotations noted above from the specification. "Seamless" does not mean "without a boundary" as the office action seems to imply. It means an abutment of two edges without a groove. Because the term "seamless" is clear and easily understood in light of its common meaning as well as its use in the specification, the objection that the claims are indefinite because of its use should be the withdrawn.

The subject matter of a claim 11 has been incorporated into claim 1. Claim 11 added to claim 1 that "the walls and bottom are formed of a

thermoplastic material and the hinges are formed of a different thermoplastic material." Claim 11 was rejected as obvious in light of Bromley as modified by Meacham. Conceding that Bromley does not teach flexible hinges made from a different material, the office action turns to the patent issued to Meacham. Meacham does in fact show flexible hinges in a shipping container that are made of a different material than the walls and bottom. However, as is clear from column 10, lines 8 - 10, the Meacham patent cannot make the claimed invention obvious. Meacham states:

The contact extension 526 and 528 are connected to the corners 518a and 520a of the stepped hinge flanges 518 and 520. The contact extension 526 and 528 are connected to the corners 518a and 520a by a suitable mechanical fastener.

This is a teaching that specifically leads away from the present invention.

The claimed invention teaches that the flexible hinge is "fused" to the wall and bottom so as to make a seamless connection between them. "Fusing" is accomplished by partial melting of the materials so that they form a zone of mixed composition rather than two edges abutting each other. Because the combination of references does not suggest connecting the hinge to the walls and bottom by fusing them together, the combination proposed in the office action, i.e., a different-material hinge connected with a mechanical fastener to the walls and bottom, would generate the same problems that existed in the prior art, namely, seams, cracks, crevices, and grooves where contaminants could accumulate and hide during the cleaning process with the result that the container would not be sufficiently cleaned for reuse. Because the combination

of references is proposed without any suggested motivation for making the combination and because the combination, even if made, comes up missing a claimed feature, the combination cannot make obvious what is claimed in claim 1.<sup>1</sup>

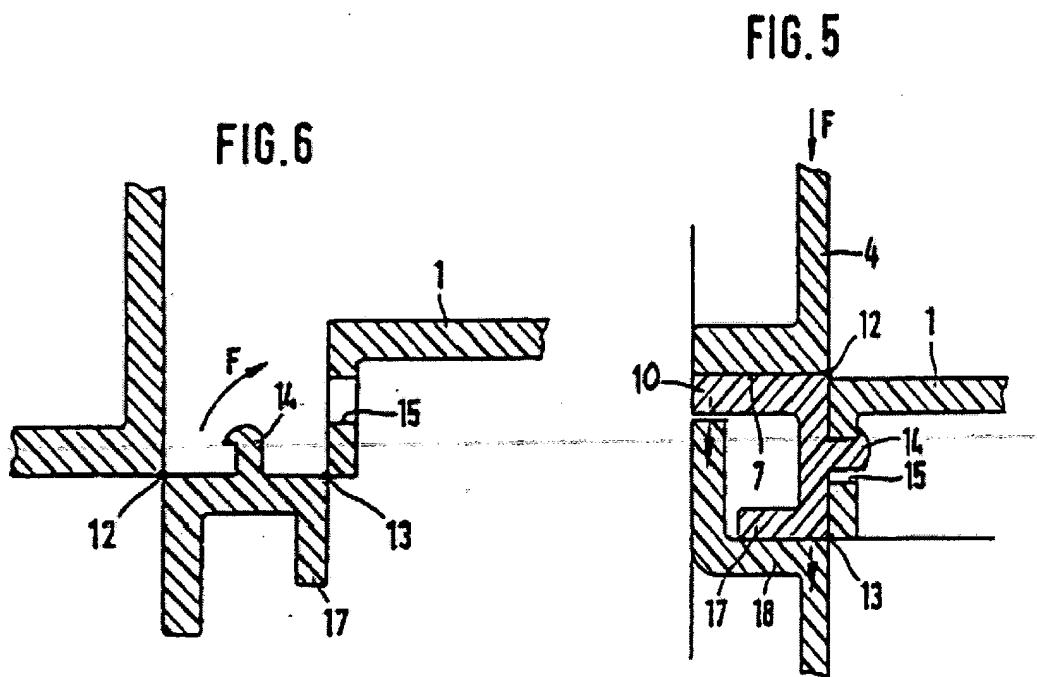
Claim 11 was also rejected as unpatentable over Umiker in view of Meacham. Again the office action admits that the principal reference does not teach hinges of different materials, and Meacham is relied upon supply this deficiency. However, as noted above, Meacham teaches the use of mechanical fasteners joining the flexible hinge material to the walls and bottom. Meacham does not teach or suggest that the hinges be fused to the walls and bottom to form a seamless joint. The prior art does not solve the problems that the applicants solve, and it does not teach structure claimed by the applicants. Accordingly, these two references, even in combination, cannot teach the claimed invention. The references simply do not teach two different thermoplastic materials, one for the walls and bottom, the other for the hinges, which are fused each other to form a seamless joint between the flexible material and the walls and between the flexible material and the bottom.

In view of the foregoing, claim 1 and the claims that depend from it appear patentable over the art of record.

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<sup>1</sup> Meacham does mention something about using an adhesive in connection with a "unique T-shaped rib which snaps into a mating groove formed in the edges of the parts to be coupled for pivotal movement." Column 4, lines 46 – 49. But neither the "unique T-shaped rib" nor its cooperating groove is shown or described, and apparently without these shapes – whatever they may be – the adhesive method will not work. A reference can only teach that which it enables, and Meacham does not enable the adhesive-with-unique-T-shape-and-groove method since the shape is not disclosed in any fashion. In any event, an adhesive is not the same as the claimed flexible material fused to the walls and bottom. Fusing may be accomplished by partially melting the materials so that they commingle before solidifying. Although the melting is described as being done with heat, it could as easily be accomplished with a fugitive solvent.

Claim 10 has been rewritten in independent form. Claim 10 was rejected as being anticipated by Umiker. Umiker shows a collapsible container with two flexible hinges 12, 13 between the bottom 1 and each side wall 4. One of the hinges 12 connects the sidewall 4 to an intermediate member 10 and the other hinge 13 connects the intermediate member 10 to the bottom. After the container is removed from the mold in which it is made, the intermediate member is rotated 90 degrees from the position shown in Figure 6 to the position shown in Figure 5 and permanently snapped in position (barb 14 through opening 15) so that it forms a short upright wall to which the upper wall element 4 is connected.



The Umiker patent describes in column 3, beginning at line 38, how the intermediate members are interlocked with the bottom "so that the intermediate element 10 then in principle is an integral component of the bottom 1." At column 4, lines 59 - 67, Umiker describes the result of this one time assembly step:

As can be quite clearly seen from Figures 5, 7 and 8, the film-like hinge is located between the sidewall and the corresponding intermediate element at the inside margin of the sidewall, so that the correspond [sic.] wall can only be folded to the inside with respect to the container and in [sic., to a?] upright, perpendicular position with its lower marginal face 6 bearing on the corresponding support face 7 of the intermediate element. ***The sidewall thus cannot be folded to the outside.***

(Emphasis added.)

Unlike Umiker where the walls cannot be folded to the outside, Claim 10 requires the walls and bottom to have three positions, a first in which the walls are folded to the outside, a second in which the walls extend upward from the bottom, and a third in which the walls are folded inward onto each other and the bottom. Umiker does not disclose this arrangement.

Figure 6 illustrates Umiker's "as-molded" conformation; the side wall is extending upward from the bottom, just like the claimed second position. Thereafter, the intermediate element is rotated in the direction of the arrow F until it reaches the locked position shown in Figure 5. As noted, this is essentially a permanent position for the intermediate element. Umiker also includes a folded position in which the side walls are folded onto each other and the container bottom; just like the third claimed position. Umiker does not disclose a position like the first claimed position.

In order to exclude the possibility that the as-molded arrangement might be considered as being the claimed first position, claim 10 has been amended by adding that the walls are movable repeatedly between the three positions.

Umiker specifically teaches away from this arrangement. Because claim 10 has a three positions and the cited reference only two, the reference cannot anticipate claim 10, and this even before the amendment is considered.

The three positions of the sidewalls with respect to the bottom claimed in claim 10 have distinct utilitarian aspects. When the claimed shipping container is in the first position with the walls folded outward from the bottom and essentially coplanar with it, the container is easy to clean. In the position where the walls are upright, the container is useful for shipping goods. (As noted the walls may taper in or out from perpendicular to the bottom without deviating from the scope of the invention.) When the walls are folded inward, the container is compact for return shipment after the goods have been delivered. Clearly the reference relied upon does not achieve this result as the inventor states that the outward folding of the walls is impossible and therefore specifically excluded from the teachings of this patent. Accordingly, Umiker can neither anticipate nor make obvious the subject matter of claim 10.

The remaining claims (except claim 10) depend from claim 1 directly or indirectly. They add subject matter to claim 1 which further distinguishes them from the prior art.

Claim 12 was rejected with the statement that “the process steps do not require any structure that is not in the combination of references.” As discussed above, a fused connection between the hinge material and the bottom and wall material is part of what makes the joint seamless. None of the references shows a molding process where this is achieved, much less one where the hinge material



is injected in second step with the bottom and walls so that the hinge material and the previously molded bottom and wall material fuse. None of the references obtain the resultant seamless fused joint, and none teach making a living hinge in this manner. Accordingly, the subject matter of claim 12 is patentable, and it should be allowed.

### **Conclusion**

In view of the foregoing, the present application is believed to be in a condition for allowance and an early indication to that effect is requested. If the application is not believed to be in condition for allowance, the Examiner is asked to telephone the undersigned to resolve any remaining issues.

Should a petition for an Extension of Time be necessary for the timely reply to the outstanding Office Action (or if such a petition has been made and an additional extension is necessary) petition is hereby made, and the Commissioner is authorized to charge any fees (including additional claim fees) to Deposit Account No. 18-0988, under Attorney Docket No. CREP P0154US.

Respectfully submitted,

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Date Feb. 17, 2004   
Gordon D. Kinder